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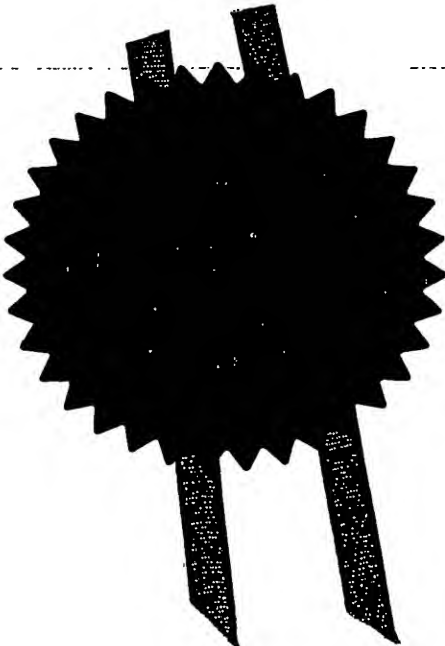
PCT

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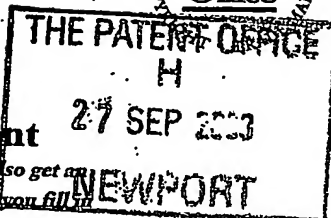
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Signed *Andrew*

Dated 16 August 2004

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Patent of 1977  
(Rule 1)



1/77  
29SEP03 E840446-1 C18036  
P01/7700 0.00-0322666.9

The Patent Office

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# Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

1. Your reference

W.B./200

27 SEP 2003

2. Patent application number

(The Patent Office will fill in this part)

0322666.9

3. Full name, address and postcode of the or of each applicant (underline all surnames)

BRIAN HARTLEY  
12, OAKLEY AVENUE,  
BROCKWELL  
CHESTERFIELD  
DERBYSHIRE  
S40 4DS  
572.5627002

Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

4. Title of the invention

MOTOR POWERED WHEELBARROW

5. Name of your agent (if you have one)

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

~~AS ABOVE~~  
SWINEN & PEARSON  
48, FRIAR GATE,  
DERBY,  
DE1 1G4.

PF51/77  
518/04  
MAN

Patents ADP number (if you know it)

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number

Date of filing

U/K

(if you know it)

(day / month / year)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing

0313 986.1

(day / month / year)

17-6-03

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:

- a) any applicant named in part 3 is not an inventor, or
  - b) there is an inventor who is not named as an applicant, or
  - c) any named applicant is a corporate body.
- See note (d))

**Patents Form 1/77**

9. Enter the number of sheets for any of the following items you are filing with this form.  
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Description 4 ✓ *Jim*

Claim(s)

Abstract

Drawing(s) 3 PAGES OF 5 DRAWINGS + 3

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 9/77)

Request for substantive examination (Patents Form 10/77)

Any other documents (please specify)

11.

I/We request the grant of a patent on the basis of this application.

Signature

*B. Hartley*

Date

26-9-0

12. Name and daytime telephone number of person to contact in the United Kingdom

01246-550047

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## MOTOR POWERED WHEELBARROW

Wheelbarrows are well-known; they are used to transport materials from one place to another.

The type referred to has one wheel at the front and two handles at the rear.

The Wheel at the front can jam when heavy objects are being transported over rough ground, also the wheelbarrow can be hard to push up hill or when negotiating steps, etc.

The present invention seeks to overcome these problems by allowing the operator of a wheelbarrow to negotiate objects that the wheelbarrow may encounter, and manoeuvre it more easily.

An electric motor is fitted in a suitable position to allow a drive train to be connected to the wheel of the wheelbarrow. The drive train can consist of two sprockets, one with a small sprocket and a ratchet system fitted to the centre (similar to a bicycle free rear wheel). This is fitted to the shaft of a gearbox, which is driven by an electric motor. A larger sprocket is fixed to the shaft attached to the wheel on a wheelbarrow, or directly onto the side of the wheel. A chain is fitted between the two sprockets to enable the electric motor to drive the wheel on the wheelbarrow.

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A rechargeable battery is fitted on the underside of the wheelbarrow and this can be of a plug in type so that as one battery is exhausted a second battery, which has been charged, can be plugged into a socket which connects it to suitable electrical switchgear. The battery can then be connected to a bell type press switch which is fitted adjacent to one of the handles of the wheelbarrow. When the bell switch is pressed contact is made through wiring to the electric motor. As a second connection is also made from the battery to the electric motor, this causes the wheel on the wheelbarrow to turn. The operator must raise the rear of the wheelbarrow using the two handles at the same time as

the bell push is pressed, the wheelbarrow will then move forward. If the operator does not require assistance from the electric motor he simply take his finger off the bell push.

The wheelbarrow can still be pushed forward by the use of the operator's own power, this is because the free wheel sprocket fitted to the end of the gearbox allows it to turn without the electric motor or gearbox turning at the same time.

A toothed belt and suitable pulleys could also be used instead of being chain driven if required.

The wiring to the various connections on the wheelbarrow can, where practicable, run inside the frame of the wheelbarrow.

Embodiments of the present invention will now be described by way of example only, with reference to the accompanying drawings, in which:

Fig 1. is a side view of a typical wheelbarrow

Fig 2. is a view of Fig 1, and showing the modifications that have been made

Fig 3. is a side view of the drive train casing

Fig 4. is a view from above of the drive train casing

Fig 5. shows the two sprockets and drive chain

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#### **Referring to Fig 1**

This is a side view of a typical wheelbarrow 10, showing a container 11, a support frame 12, and a wheel 13, a pair of handles 13a, (only one is shown), and two bearings 14a, (only one is shown) to support the wheel.

#### **Referring to Fig 2**

This shows the wheelbarrow 10, which has been modified to make it power driven. A casing 14, has been fitted between the frame 12, and the container 11, a flat

plate 15, is sandwiched between the two, and four bolts 16, used to secure it. The casing 14, covers the two sprockets 32 and 34, and drive chain 35, Fig 5, and the electric motor 17, Fig 4, is bolted to it. The lower section of the casing 14, is bolted 18, to the frame 12, of the wheelbarrow. A battery box 19, is fixed below the container 11, and a battery 20 is plugged into the box 19.

Also fitted on the side of the box is a fuse to protect the circuit 36, and an isolation switch 21. A momentary switch 22, is fitted to one of the handles 13a, of the wheelbarrow 10, and this has a cover 23, to protect the switch 22, from any water or dirt that may affect the operation of the switch. Wiring 24, is threaded through a hole (not shown) in the support frame of the wheelbarrow 10, and this is connected between the switch 22, the battery in the box 19, and the electric motor 17.

#### **Referring to Fig 3**

This shows the casing 14, that supports and covers the drive train shown in Fig 5. a flat plate 15, is welded or bolted to the casing 14, this has a hole 26, for the drive shaft of the gearbox which is connected to the electric motor 17, Fig 4, to pass through, and a larger hole 27, for the drive to the wheel 13 Fig 1, to pass through. A cover plate 28, is held in place by nine screws 29.

#### **Referring to Fig 4**

This shows the box section 14, from above showing the four bolt holes 30, at each corner of the plate 15, for screws 16, Fig 2, to pass to secure it to the frame 12, Fig 2. The electric motor 17, is secured to the box section 25, below the plate 15. Four threaded rods 31, (only 2 shown) pass through a hole 27, in the opposite end of the casing to the electric motor 17, and these are used to secure the large drive cog 32, Fig 5, using the four holes 33 in the sprocket for this purpose using two nuts at one end of the threaded rods 31. Four holes are drilled in the barrow wheel (not shown) for the other ends of the four threaded rods 31, to fit through and these are secured by the two nuts at the end of each threaded rod 31. A grub screw 14, Fig 5, can be used as an alternative to fix the sprocket to the wheel shaft if the shaft is permanently fixed to the wheel.

**Referring to Fig 5**

This shows the drive from the electric motor 17, Fig 4, to the wheelbarrow wheel 13, Fig 1. It consists of a cog 34, which is fitted onto the drive shaft of the gearbox fitted to the electric motor, and a larger cog 32, which is secured to the wheel 13, of the wheelbarrow. A chain, is used to make the drive connection between the two. When the connection is made between the switch 22, Fig 2, by the operator lifting the wheelbarrow using the handles 13, Fig 1, and pressing it, the electric motor 17, Fig 4, powers the wheelbarrow forward. This will occur whilst the battery is charged.

Whilst endeavouring in the foregoing specification to draw attention to those features of the invention believed to be of particular importance, it should be understood that the Applicant claims protection in respect of any patentable feature or combination of features hereinbefore referred to and/or shown in the drawings whether or not particular emphasis has been placed thereon.

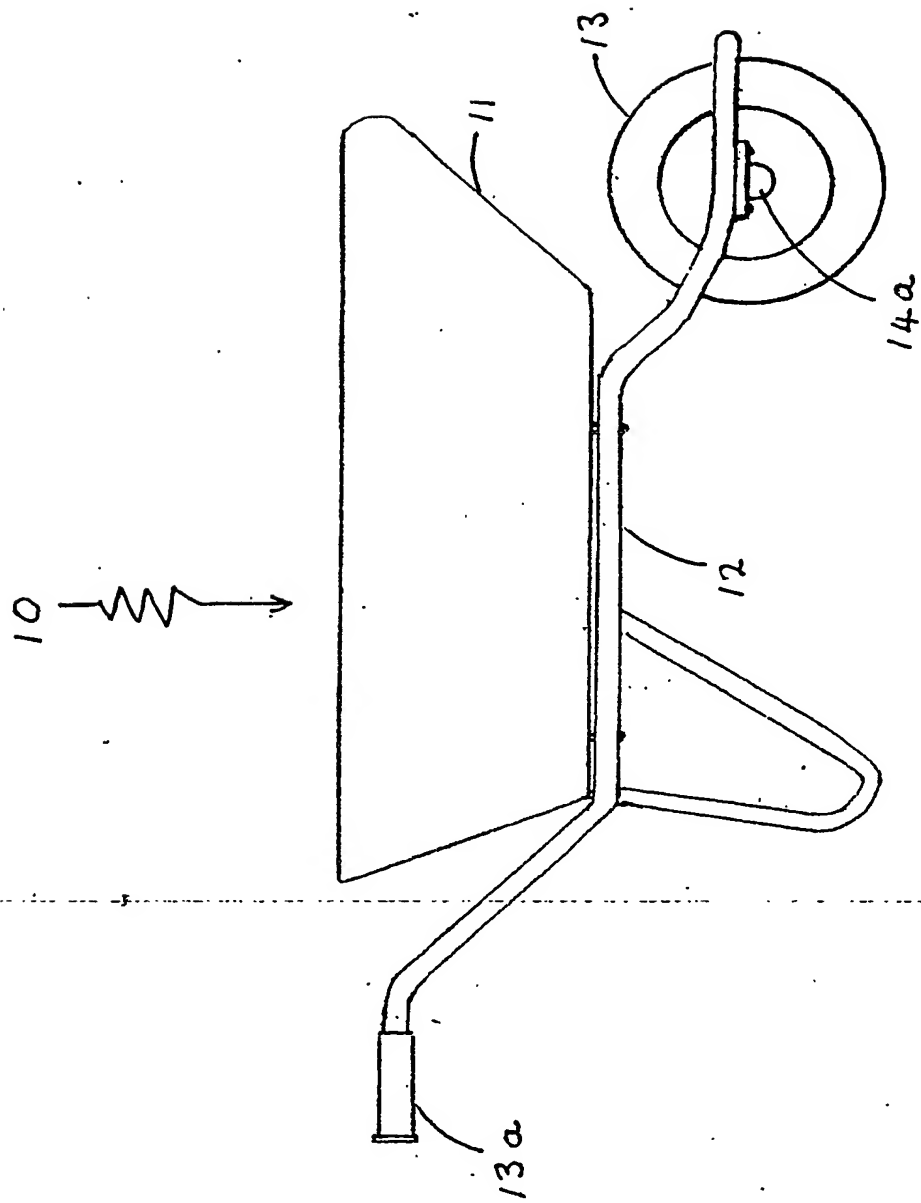


FIG. 1





FIG. 3

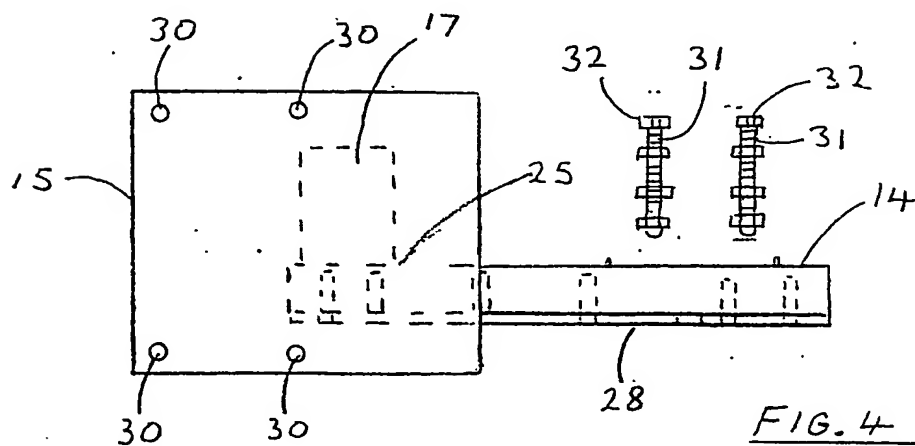
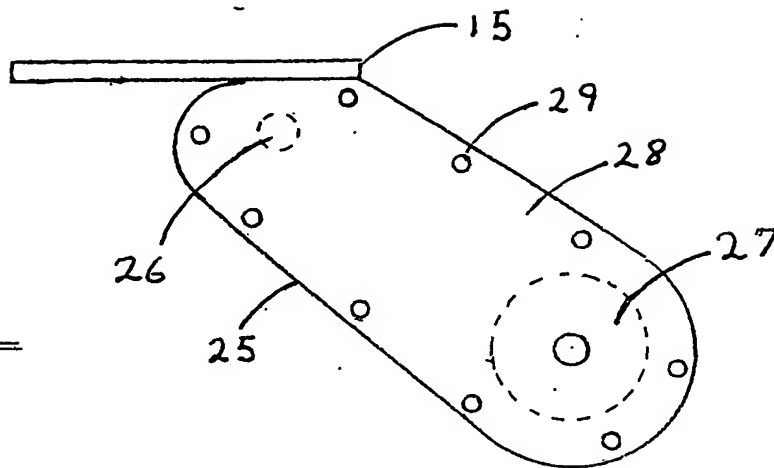
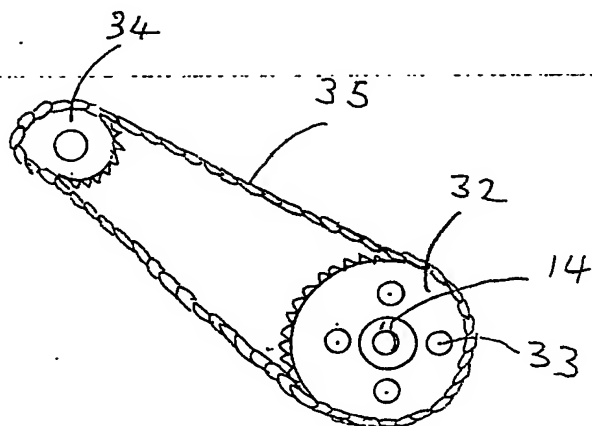


FIG. 4

FIG 5



**PCT/GB2004/002565**



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